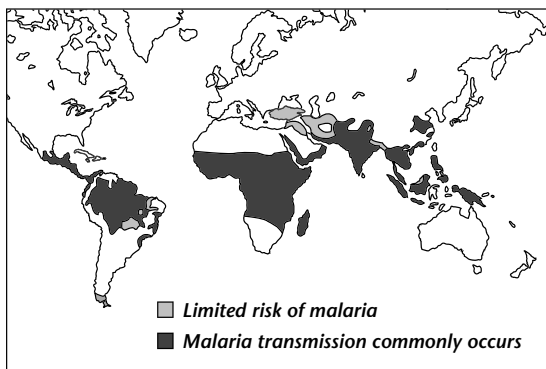


Modern Genetics ▪ Enrich

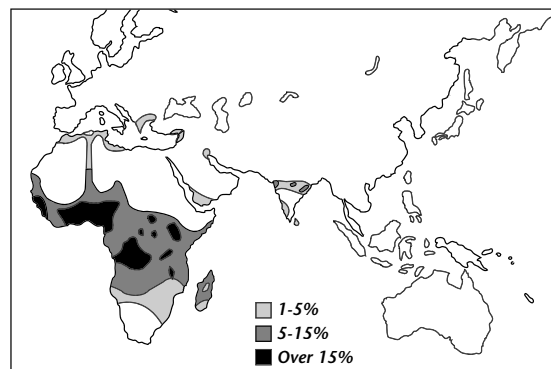
Sickle-Cell Allele and Malaria

The allele for sickle-cell disease is most common in people of African ancestry. The reason for this probably has to do with the relationship between the sickle-cell trait and malaria. Malaria, a disease common in parts of Africa, affects red blood cells. Carriers of the sickle-cell allele are resistant to malaria. Scientists think that the sickle-cell trait helps carriers resist malaria. The map on the left shows the distribution of malaria worldwide today. The map on the right shows the distribution of the sickle-cell allele.

Where Malaria Occurs Today



Percentage of Population with Sickle-Cell Allele



Answer the following questions on a separate sheet of paper.

1. Where is malaria most common today?
2. Where is the sickle-cell allele most frequent?
3. Malaria is caused by a microscopic parasite that infects the blood. Based on this fact, hypothesize why people with sickle-cell trait are resistant to malaria. (*Hint: A parasite is an organism that lives and feeds on or in another organism.*)
4. Suppose malaria were eliminated as a human disease. Predict how the frequency of the sickle-cell allele might change over time. Explain your prediction.